much to remind the reader of the Weissnichtwo Professor of Things in General; for students who have difficulty in seeing a number of sides to the same question the book will surely be an inspiration. Among the topics discussed are: the relation between material and form throughout nature; metamorphosis and substitution; the relation of species, variety, and race; phylogeny; paleobotany, etc.

The work has an almost medieval smack; after a few introductory pages it is written entirely in dialogue, which may make it tedious for him who is only after the kernel of the nut. There is no doubt, however, that the reader's interest is held by these curiously learned dialogues of Fritz, Hans, and the other students, albeit the ludicrous will occasionally arise to obscure the scientific.—B. E. LIVINGSTON.

MINOR NOTICES.

TREES, SHRUBS, and VINES[5] is a book designed especially for New Yorkers, and to them it may be useful. Though it professes to describe these plants in all the northeastern United States, this part is distinctly inferior and secondary. The greater part of the book is devoted to lists of "these three growths" and to "rambles" in Central Park, whose glories are fully exploited. To a brief description of native trees, shrubs, and vines 172 pages are devoted, and nearly half as much more to the foreign species grown in Central Park. The descriptions are too brief, lacking in contrasts, and often maddeningly comparative. Species of the same genus are often widely separated. The keys are worthless; *e. g.*, one of the chief distinctions is "widely distributed within territory" and "found only on frontier"—exactly the kind of information that one endeavoring to name an unknown tree is unlikely to possess. If the book sailed under true colors it would be more commendable; but judged according to its title it is far inferior to others of like purpose.—C. R. B.

NOTES FOR STUDENTS.

DUDE,[6] studying both fungi and higher plants, finds that the replacement of oxygen by purified hydrogen can be withstood by spores and seeds for a long time (in seeds fifteen to fifty days), but that their germination is much delayed. The vegetative tissues are injured irreparably after an hour or at most a few hours, the younger being most easily killed; yet meristematic tissues endure the hydrogen for three to five days. In all conditions a higher temperature accelerates the action.—C. R. B.

DR. B. LONGO[7] holds that the pollen tube is the only channel by which the embryo of Cucurbita can receive nutriment, because of the marked cutini-

[5] PARKHURST, H. E., Trees, shrubs, and vines of the northeastern United States. 12mo. pp. viii + 451: Illustrated. New York: Charles Scribner's Sons. 1903. $1.50.

[6] DUDE, MAX, Ueber den Einfluss des Sauerstoffsentzuges auf pflanzliche Organismen. Flora **92**: 205–252. 1903.

[7] LONGO, B., La nutrizione dell' embrione delle Cucurbita operata per mezzo del tubetto pollinico. Annali di Botanica **1**: 71–74. 1903.